

smaller sleep debt. The question is why don't they know it. The reasons are as follows.

Most people don't know their personal sleep requirement.

Most people know nothing about sleep debt.

Most people don't understand the function of their circadian system (biological clock).

Most people don't know the significance of being tired all the time.

Most people know nothing about sleep disorders.

An extremely important principle is that there are two ways and only two ways to build up a sleep debt; inadequate amounts of sleep and excessively frequent interruption of sleep as occurs in the obstructive sleep apnea syndrome and the restless legs syndrome.

Sleep scientists have known these facts for more than two decades and have tried and tried to bring them effectively to the attention of key communities. One would think that learning these things would be a core part of many professional training programs, and if nowhere else, certainly in the transportation industry. Airline personnel need to know the principles of fatigue management, railroad personnel, maritime personnel, and the vast community of automobile drivers, but we have learned in our feasibility trial and I am now convinced, that the highest priority for intensive professional training regarding fatigue management should be long haul truck drivers. Of course, all drivers must have the ability to maintain attentive alertness while driving. However, the highest educational priority should be bestowed upon the community of long haul truck drivers who sit astride 40 tons of highly evolved and intricate machinery. In other modes of transportation, attentiveness every second is not required.

Thus, we propose a special program that involves (a) training to behavioral change and commitment and (b) screening for sleep disorders and ease of access for definitive diagnosis and effective treatment. Long haul drivers who are successful in completing this program will be transformed by sleep debt reduction and improved personal health, and they will become disciples seeking to recruit their fellow truckers.

Today, instead of what we are proposing, we have prescriptive hours of service which guarantee that there will be times when a driver must stop driving although he or she is fully alert. This may not be dangerous, but it is certainly frustrating. Unfortunately, the Hours of Service regulations also guarantee that there will be times when dangerously fatigued truck drivers can keep driving, sometimes for many hours. A typical scenario is that a driver must stop at a time when clock dependent alerting will not allow sleep. At the end of this period with very little rest, the driver is very tired but can now go for another 10 hours. If he chose instead to sleep, the rest period would be extended to 16 hours and his productivity would be greatly reduced.

Personally, I have wanted to carry out this type of intensive training with targeted personnel for more than 10 years. In 1990 and 91, we completed a study of 200 drivers and found that 75% of them had obstructive sleep apnea and that in interviews of more than 600, 82% said the signal to stop driving was "falling asleep." Now, two visionary companies, Dart and Star, have stepped forward and have supported such a program with their own resources. We have completed a feasibility study with nine drivers and in my more than 30 years as an educator, this was one of the best teaching experiences we have ever had. Initially, I was uncertain that we could accomplish the desired result in this community. I insisted on an adequate oppor-

tunity, which consisted of an initial three full days of education and training together with sleep disorders screening, diagnosis, and most importantly, treatment. Then three full days of additional education, review, and evaluation one month later. In brief, at the second session we learned that the prior training and screening had been successful beyond our wildest dreams. The fatigue of this group was greatly reduced; the success of CPAP treatment had a double impact because spouses experienced great relief. Finally, I believe that our initial group of drivers is now completely safe, feel much better, and have substantially improved cardiovascular health. They are the vanguard of a new breed of long haul trucker, and on their own initiative, they have named themselves "The SAFE TEAM" which stands for Sleep and Fatigue Experienced Truckers Educating America's Motorcarriers. I also believe that long-haul truckers will be the vanguard of educating our entire society.

We are ready and eager to go forward with a formal pilot project and will seek approval of the Office of Federal Motor Carrier Safety Administration. We will put in place technology to monitor SAFE TEAM drivers and to insure that waiver of hours of service and the essential flexibility is not abused. I see no likelihood of the latter because of the commitment of these drivers to safety, but political issues make it necessary.

The intense interaction of the Stanford group which includes SleepQuest and the School of Sleep Medicine as partners in the Stanford University Center of Excellence, the Safety Research Institute, and above all, the pioneering group of drivers revealed and clarified what will surely become the theme of the pilot project and beyond. Fatigue management education is the missing piece in the training of professional drivers. This is why the sleep training was embraced by the drivers and their companies and why we can predict that it will eventually be enthusiastically embraced throughout the entire long haul trucking industry.

[From Traffic World, Oct. 30, 2000]

ENLIGHTENED SELF-INTEREST

(By Frank N. Wilmer)

PILOT PROGRAM WOULD TEACH FATIGUE MANAGEMENT, PERMIT DRIVERS TO SET THEIR OWN WORK-REST CYCLES

When the shipment absolutely positively has to be there on time, perhaps the truck driver should take a nap. That's the opinion of Stanford University sleep scientist William Dement and safety consultant and former Federal Highway Administration chief counsel Anthony McMahon. They say drivers properly trained in fatigue management are more productive, more alert and safer. They also make more informed decisions on when to drive and when to rest than bureaucrats who prescribe a one-size-fits-all model.

Dement and McMahon intend to ask the Federal Motor Carrier Safety Administration to authorize a three-year pilot program under which prescriptive hours-of-service regulations would be scrapped temporarily in favor of enlightened self-interest by up to 80 drivers who successfully complete Dement's fatigue-management course. Where federal regulations now mandate a relatively inflexible driving schedule, the Dement-McMahon proposal would permit drivers to determine, within limits, when they are alert and able to drive safely.

The drivers' dispatchers as well as members of the drivers' families also would receive fatigue management training and drive time behind the wheel would be monitored electronically. McMahon said the pilot program, whose details would be fleshed out in

collaboration with the FMCSA, likely would limit drivers to the same maximum 70 hours of driving time within eight consecutive days as now exist. But drivers would have greater flexibility to devise how they accumulate those 70 hours of driving time.

The proposed pilot program would involve Dart Transit of Eagan, Minn., which utilizes owner-operators, and Star Transport of Moton, Ill., which employs its own drivers. Dart CEO Glenn Werry and Star CEO Donald Oren have pledged to pay the costs of the pilot program, said McMahon.

"The experience at Stanford proves to me we can create a cadre of drivers who understand how sleep really works and will use new knowledge to drive more safely, reduce the dangers to themselves and others and improve their quality of life on and off the road," said Dement, a medical doctor who also holds a Ph.D. in neurophysiology.

The Dement-McMahon proposal is the first entrepreneurial approach to what has become a furious battle between the FMCSA and the trucking industry on how to revise arguably outdated safety regulations that prescribe the maximum number of hours commercial drivers may be behind the wheel.

An April FMCSA reform proposal would limit daily driving time to 12 hours, mandate 10 continuous hours of daily rest, prescribe up to four workday breaks totaling two hours and prohibit drivers from being behind the wheel for up to 56 consecutive hours each seven-day period even if it stranded them at truck stops.

The American Trucking Associations, which estimates the FMCSA's proposed hours-of-service revision could increase universities cloning the training program, said Dement.

Dart's Oren, who already sent some drivers through Dement's fatigue management course, said they previously "didn't worry" about how they spent their time before getting behind the wheel, but now ensure they do not have alertness-depriving "sleep debt" before driving. "It has become a way of life for them," said Oren.

FMCSA Acting Deputy Administrator Clyde Hart and ATA President Walter McCormick each told Traffic World they hadn't seen the proposal and thus could not comment.

VICTIMS OF GUN VIOLENCE

Mr. DURBIN. Mr. President, it has been more than a year since the Columbine tragedy, but still this Republican Congress refuses to act on sensible gun legislation.

Since Columbine, thousands of Americans have been killed by gunfire. Until we act, Democrats in the Senate will read the names of some of those who have lost their lives to gun violence in the past year, and we will continue to do so every day that the Senate is in session.

In the name of those who died, we will continue this fight. Following are the names of some of the people who were killed by gunfire one year ago today, December 5, 1999:

Trennell Alston, 26, Baltimore, MD; Georges Ronnell Barnes, 29, Baltimore, MD; Mary Collien, 51, Baltimore, MD; Gilbert Gallegos, 76, Salt Lake City, UT; Donta Henson, 18, Chicago, IL; Nathan Hornes, 36, Oakland, CA; Makisha Jenkins, 18, Baltimore, MD; Christopher Jones, 17, Washington, DC; Greg Karavites, 38, Denver, CO; Jill

Lundstrom, 25, Miami-Dade County, FL; Johnny Manning, 29, Minneapolis, MN; Mary Matthews, 39, Baltimore, MD; Bertess Montgomery, 87, Memphis, TN; Ramiro Peredez, 34, Atlanta, GA; Lionel Robinson, 23, Baltimore, MD; Patrick Michael Smith, 21, Washington, DC; Levanna Spearman, 23, Baltimore, MD; Alan Villarreal, 23, Houston, TX; Unidentified Male, Newark, NJ; and Unidentified Male, Newark, NJ.

Five of the people I mentioned were the victims of what has been described as one of the worst mass killings in Baltimore history. Mary McNeil Matthews; her mother, Mary Helen Collien; her daughter, Makisha Jenkins; and two family friends, Trennell Alston and Lavanna Spearman; were killed one year ago today by four men who burst into Mary McNeil Matthews' home and shot all five women.

We cannot sit back and allow such senseless gun violence to continue. The deaths of these people are a reminder to all of us that we need to enact sensible gun legislation now.

ENSURING TRAFFIC SAFETY—H.R. 5164

Mr. MCCAIN. Mr. President, in the weeks since Congress passed H.R. 5164, the Transportation Recall Enhancement, Accountability, and Documentation Act, and it was signed into law by the President, questions have been raised by some of my colleagues about the impact of the bill on small business. I want to make clear my intentions toward small manufacturers in passing this legislation.

Obviously, the bill is not intended to result in burdensome and ineffective regulations on small businesses or any size business for that matter. I would expect the Department of Transportation in establishing the regulations under the bill to go through the normal analysis required under existing law to ensure that regulations are not overly burdensome but are effective in advancing the cause of safety.

Let me be clear, however, the primary purpose of this bill and the Department of Transportation is to ensure the safety of the traveling public. No priority can or should be higher as the agency crafts these new regulations. I hope this responds to any concerns my colleagues may have about the provisions of the bill.

Mr. BOND. I thank the Senator and agree without reservation that the purpose of this legislation is to increase safety on the highways. No one in the small business community supports allowing defective auto parts or automobiles to be allowed on the road. After all, small businesses, their employees, and their owners are some of the drivers of the vehicles that would be identified under this law, and they are the other drivers on the road with these vehicles. They care as much as anyone else about highway safety. Without question, the safety of our

roadways is one of our highest priorities.

I would just like to add one clarification. When the Department of Transportation promulgates the regulations required by this act, it is required under the Small Business Regulatory Enforcement Fairness Act (SBREFA) to determine whether the regulations will have "a significant economic impact on a substantial number of small entities." If the regulations rise to that level, the Department is required to conduct an initial regulatory flexibility analysis and a final regulatory flexibility analysis as described in SBREFA so that the impacts on small businesses can be identified and better understood. None of the requirements under SBREFA are intended to, or have been shown to, interfere in any way with an agency's regulatory objectives. In this case they would not impede, in any way, the Department of Transportation's ability to provide the maximum safety improvement on the highways as mandated under the TREAD Act.

This is the current law and is consistent with the provision in the TREAD Act which prohibits the Department of Transportation from issuing unnecessarily burdensome regulations. I just want to make it clear that we will be watching closely to make sure that the Department of Transportation adheres to the mandates of SBREFA.

DEPARTMENT OF ENERGY'S OFFICE OF SCIENCE

Mr. BINGAMAN. Mr. President, I rise today to address the importance of the Department of Energy's Office of Science, the nation's leading source for fundamental research in the physical sciences for the areas of physics, chemistry, and materials science, and a significant contributor to the biological sciences. Besides funding the individual researcher, the Office of Science leads our nation in providing specialized large user R&D facilities. A partial list of such facilities would include the Stanford Linear Accelerator, the Center for the Microanalysis of Materials at the University of Illinois, The Los Alamos Neutron Science Center, the High Flux Isotope Reactor at Oak Ridge, the high energy accelerators at the Fermilab and the National Synchrotron Light Source at the Brookhaven National Laboratory. These user facilities are national treasures. One cannot over emphasize their importance. They are used by not only university researchers from all 50 states but by industry in both the biological and physical sciences. In 1999, there were 5500 users on just the large light sources alone to investigate new structures of matter in both the biological and physical sciences. In the last four years, the number of biological researchers using these facilities has risen by a factor of four and now accounts for 40 percent of all users.

Each of these 5500 investigations on just the light sources alone generates new intellectual property—a dominant export in the 21st century global economy. In short, these facilities provide the critical basic R&D that industry cannot and will not fund directly, R&D that is crucial to maintaining the tremendous technological engine of growth that fuels our economy today.

I would like to point out that in the 106th Congress there was a large and successful bipartisan campaign in both the House and Senate to support the Office of Science's budget request for Fiscal Year 2001. However, the Office of Science's 2001 budget request only met the level of its 1990 budget as adjusted in year 2000 dollars. In comparison the overall federal R&D budget for the life sciences has increased by 45 percent in the same period. The trends in the neglect of funding for the Office of Science are deeply disturbing and are now beginning to influence the basic indicators of intellectual property generation. If one tracks the submissions by U.S. researchers in some of our most prestigious physics journals you'll find that in 1990 the United States commanded the lead of submissions at about 50 percent worldwide. In 1999 the submission rate has dropped to about 25 percent worldwide. The momentum at a national level in the physical sciences is one of decline. We should be disturbed by this trend—the physical sciences are the foundation of the microchip industry, the telecommunications industry, the transportation industry and the petrochemical industry. We are talking about what fuels our engine of U.S. economic growth—high technology and maintaining a commanding lead in a 21st century global economy.

As the 107th Congress gets ready to start, we must pay more attention to the Office of Science and the role that it plays as a generator of a high tech workforce, intellectual property and economic growth. The Office can play an important role in large multi-user facilities for the development of nanomaterials by developing techniques that can literally position groups of atoms to develop a whole new generation of microchip and structural materials. Leadership in such materials research will help maintain our world dominance in the telecommunications and transportation industries. Yesterday a bipartisan group of this body sent to the President a letter supporting a significant increase in the budget of the Office of Science in fiscal year 2002. This letter follows up on the support that these members expressed earlier this year during the appropriation process and presages a commitment of bipartisan support for the Office of Science in the 107th Congress. Mr. President, I ask unanimous consent that this letter be printed in the RECORD following my statement.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See Exhibit 1.)